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STUDY QUESTIONS FOR STEP 3

1. What is the function of the "Design Process"? **The "Design Process" is a systematic procedure used in industry to change ideas into useable products for consumers or other manufacturers.**
2. List in your own word the ten (10) steps involved in the design of a product or a structure:
 1. Identify, analyze and research the problem to obtain a complete description of the project;
 2. Think of possible solutions to the problem and make freehand, multiview and/or pictorial sketches of all ideas for solving the problem;
 3. Discuss all ideas with other designers, engineers, supervisors and managers;
 4. Revise and combine ideas after discussions into a "final" solution sketch;
 5. Prepare a design layout drawing to scale from the final solution sketch;
 6. Prepare scale detail and assembly drawings of all parts and sub-assemblies;
 7. Prepare complete specifications and a materials list of all parts;
 8. Make individual parts, inspect parts for accuracy, and assemble the parts to make a working prototype or scale model;
 9. Check assembly of parts and test the operation of the prototype for accuracy, reliability, and safety.
 10. Revise detail and assembly drawings if necessary and prepare technical illustrations for manuals and brochures.
3. What is the "designer's" role in the "Design Process"? **Thinkers! Very talented, highly creative individuals that are trained in problem solving techniques and making products attractive to consumers**
4. What is the "engineer's" role in the "Design Process"? **Highly trained in mathematics and sciences with emphasis in one of the following**

areas: architectural, mechanical, civil, electrical, industrial, structural, chemical, etc.

5. What is the "technician's" role in the "Design Process"? **Highly trained in practical aspects of engineering, manufacturing procedures and technical drawing/CAD principles**

6. What is the "drafter's or detailer's" role in the "Design Process"? **Highly skilled in technical drawing/CAD skills and able to understand applied mathematics and basic physics principles**

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7. What is the "illustrator's" role in the "Design Process"? **Highly skilled in pictorial (three dimensional) drawing/CAD skills, and able to visualize the shape of objects from two dimensional drawings**

8. What is the "architect's" role in the "Design Process"? **Highly creative individual with a background in planning, design and construction with an emphasis on aesthetic appearance of structure**

9. A beginning drafter or cad operator is called novice and can be promoted to apprentice and designer.

10. What is the purpose of a "Design Project Statement"? **To tell somebody what your doing, before you actually do it.**

11. What is the purpose of a "Design Project Analysis"? **The answers to the questions you have to have before you start the problem.**